PERFORMANCE MEASUREMENT SYSTEM WITH FLUORESCENT MARKERS FOR GOLF EQUIPMENT

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part application of U.S. Application No. 09/782,278 filed on February 14, 2001, now ~~pending~~ US. patent No. 6,758,759, which is incorporated in its entirety by reference herein.

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FIELD OF THE INVENTION

The present invention relates to a monitor system with optical wavelength discrimination and fluorescent markers. More particularly, the present invention relates to a system for monitoring kinematics of golf equipment and a method for use thereof.

BACKGROUND OF THE INVENTION

Devices for measuring golf ball flight characteristics and club head swing characteristics are known. For example, the golf ball or golf club head may be marked with at least one contrasting area, used to generate optical images that may be used to determine performance characteristics. Some of these devices use retro-reflective tape or paint markers. Retro-reflective markers, however, result in a raised surface when placed on the golf ball and effect flight performance of the golf ball. It would therefore be desirable to provide a system which measures the launch or flight characteristics of a golf ball using markers that did not substantially effect the flight performance of the golf ball. In addition, paint or ink-based markers and devices are ineffective in bright sunlight and do not provide sufficient optical discrimination of markers.

Devices for measuring two sports objects in a single swing are known, however, these systems have drawbacks relating to outdoor functionality, portability, accuracy, and ease of use. Thus, a need exists for a monitor system to capture club motion data and ball motion data where the system is portable, easy to use, accurate, and adaptable for outdoor use.

SUMMARY OF THE INVENTION

The present invention is directed to a method and apparatus for measuring the flight characteristics of an object using flourescent optical markers. In particular, one embodiment contemplates a monitor system for measuring flight characteristics of an object, such as a golf ball and/or a golf club, with fluorescent markers. The flight characteristics are derived from data taken when the object is in a predetermined field-of-view. The system